DHC FEASIBILITY IN A COMMUNITY - AS MUCH A QUESTION OF LOCAL SUPPORT AS OF TECHNICAL/FINANCIAL CAPABILITY

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ABSTRACT AND KEY WORDS

It is necessary, when constructing or expanding a community energy system to deal with a host of local issues. Some of the major issues are briefly explored and a mechanism for dealing with them--convening an Assessment Work Group--is suggested. Based on Federal and state experience in funding feasibility assessment and initial system definition, illustrative cases are presented where local participation significantly facilitated the building of a system. Keywords and Phrases: Assessment Work Group; Local Barriers; Marketing; Local Consensus Building; and Regulatory Approval.

INTRODUCTION

The challenge of building or expanding DHC systems in U.S. localities is at least as much a matter of solving local government and institutional problems as technical/financial ones - yet the attention and resources devoted to technical solutions usually far outweigh those applied to institutional and governmental barriers.

HUD and DOE have funded DHC feasibility (Phase I) and system definition (Phase II) studies in more than 50 U.S. localities. A mechanism has been developed and tested, formation of Assessment Work Groups (AWG) to deal, in a timely manner, with the primarily local governance and public perception aspects of a project, as well as to begin to define the technical, financial and legal concerns and identify potential key actors.

At a minimum, DHC developers and expanders usually must dig up streets; discharge effluents into the air, land, and water; and construct or renovate physical facilities - all requiring at least local regulatory approvals. Also, often crucial to gaining local acceptance is a demonstration of how the proposed new or expanded system will fit into the development strategies of the community.

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[1] The opinions expressed are those of the authors and in no way express the opinions or policies of the Department of Housing and Urban Development.

Case examples will be cited of opportunities afforded DHC developers and expanders as a result of effectively dealing with influential individuals and organizations within localities and with state and Federal officials in the localities as well.

DEALING WITH LOCALITIES - THE ASSESSMENT WORK GROUPS

In its Request for Cooperative Agreement Applications No. 6500 (HUD, 1980), from which the first 28 localities were selected to receive HUD and DOE DHC feasibility funding, HUD defined an AWG as follows:

> "DHC Assessment Work Group - A DHC Assessment Work Group consists of the party or parties necessary to carry out the provisions of the cooperative agreement and bring a project to the stage of construction. Parties comprising the DHC Work Group may include, but are not limited to: units of local governments or their agencies; neighborhood groups; citizen groups and local organizations involved with local CDBG programs; utility companies; industrial companies; state energy offices or public utility commissions; joint public/private entities; and private enterprises."

The Department also indicated, in the request for applications, its belief in the importance of the AWG:

> "The role of the DHC Work Group is crucial to the analysis of the feasibility of DHC projects and the applicant will place considerable emphasis on ensuring the full participation and cooperation of local persons and organizations which might be involved in or affected by the development of a DHC. Those DHC Assessment Work Group members which have data crucial to other phases of the project should identify that data to the applicant;..." (HUD, 1980)

In the most recently published request for proposals, the Department will again request the formation of an AWG. However, because of the wider range of potential projects and their differing stages of development, such formation will not be mandatory.

Based on experience to date, an AWG will enable potential DHC developers or expanders to achieve the necessary steps in determining the feasibility of, or initially defining, a DHC system that can garner enough support to actually be built. One would desire to (most likely need to) accomplish all or a significant portion of these steps, preferably with the support of an AWG. In structuring an AWG, HUD and DOE experience suggests the following:

> Enlist and gain the approval of the local chief executive and key staff for any substantially sized community project.

In some larger cities, key staff might suffice, including the directors of:

1. planning (concerned with infrastructure that shapes development patterns);

2. economic development (a potentially very valuable ally, often ignored);

3. public works (who will be concerned about problems caused by construction); and

4. budget and finance (particularly where bonding is being sought).

Involve those building owners and managers who have control over potential major heating or cooling loads in the area being considered, including:

1. hospitals;

2. local public buildings (libraries, schools, office buildings, the city hall;

3. Federal and state buildings (the Postal Service has indicated a willingness to consider hookup of postal buildings on a case-by-case basis and GSA has published a Memorandum (GSA, 1985) that states:

> "DHCS can provide a reliable source of energy, reduce in-house operation and maintenance requirements, and increase usable space. It is our policy that full consideration be given to utilize these systems when opportunities arise, consistent with our policy of providing efficient and economical services.
>
> "It is recognized that several of the older urban DHCS continue to face an uncertain future. There is also developing an increased interest in maintaining and improving these systems."); and

4. apartment complexes (including public housing. The HUD Office of Public and Indian Housing has published a Notice (HUD, 1988) that states, in part:

> "To be financially successful, DHC systems require as customers a majority of buildings in the area in which they provide service. HUD, therefore, is encouraging public

housing agencies (PHAs) to be alert to the possibilities of connecting to nearby planned or existing DHC systems and to cooperate with public and private sector concerns seeking to build these systems. Particularly, PHAs with older projects, where heating facilities are on the verge of needing major repairs or replacement, should investigate the possibilities of being connected to DHC systems."

HUD has embarked on a new initiative for public housing, involving "performance contracting," that can make connection particularly attractive for the housing authorities and, because it can help to finance the distribution line, to the developer and/or operator);

5. industrial and commercial complexes; and

6. military bases and facilities (The Department of Defense has published a Defense Energy Policy Memorandum (DOD, 1984) that states, in part:

> "User Coordination - The Department of Housing and Urban Development (HUD) has been studying the feasibility of third party financing of district heating systems to help revitalize economically depressed interurban areas. HUD has funded feasibility studies in many cities and has a program of matching block grants to assist municipalities in attracting private capital. In those urban areas near Defense facilities, HUD would like to have the facility energy requirement be considered as a possible "base load" of such district heating or cogeneration plants. It is the policy of the Department of Defense that cooperation with, and support of, such beneficial programs of other Federal and local agencies should be given within he bounds of the installation's legal authority and with primary consideration given to continued, reliable mission support.")

Involve potential sources of finance and potential system owners or operators, including:

1. community development or other agencies that control Community Development Block Grants (CDBG) for the Community (For current HUD purposes, it is considered a major plus if the proposed system or expansion will benefit low and moderate income people and is tied into the economic development

plans for the locality--particularly if the locality is willing to provide some CDBG assistance.);

2. banks and other financial institutions;

3. local agencies such as public works and water departments; and

4. existing DHC facilities.

Involve pertinent local utilities. (Eliminates the possibility of complaints about not being informed on proposals and provides an opportunity for the gas or electric company to own or operate the system.)

Involve local or state agencies with which you must coordinate or receive permission, such as:

1. public works department (to receive permits and coordinate planning for tearing up streets, etc. Often DHC construction can be worked in with other planned local improvements);

2. environmental agencies; and

3. public utilities commissions.

EXAMPLES

Necessity for obtaining mayor's approval and aid

1. In SAINT PAUL, then Mayor Lattimer and his staff took the lead in persuading critically important customers to contract with the new system.

2. In JAMESTOWN, then Mayor Carlson became the leading salesman, planner and path-smoother for its cogen DHC project. He demonstrated the extent of his involvement at one HUD/DOE-sponsored DHC progress meeting and displayed a map and cited, without notes, every present and projected customer and the amount of energy required for each.

3. One city progressed, with the aid of the long-time mayor and his city engineer, to the point of commitment of load, including the City Hall. Upon the mayor's death, a new mayor took over, appointed a new city engineer, and the project dropped back to square one - where it remains--in spite of a Federal grant of over $1 million for system construction.

Opportunities for signing on good loads such as public buildings and entities:

1. Local Government for load - In LINCOLN, city buildings provided all the load for first loop, which is now being expanded to include additional users. In ALBANY, early involvement by a rehab director, caused all rehabbed buildings in an area being studied for DHC feasibility to be fitted with connections for a possible DHC link; and

2. Public Housing Authorities for load - Existing DHC systems in BALTIMORE and DETROIT have found significant advantages in connecting to public housing. New HUD regulations provide incentives for connection, including possible performance contracting deals by which Detroit Edison Steam is being enabled to be reimbursed for the cost of the line to a substantial public housing project from the energy and operation and maintenance savings that the authority will realize.

Local Government as Facilitator

1. In KANSAS CITY, a local agency was able, by rallying customers and petitioning the Public Utilities Commission, to delay closing of a utility-owned system until it could be bought out by a DHC system developer.
2. Systems in SAN JOSE and PROVO owe their existence to the actions of local agencies.

3. In JAMESTOWN, the local public electric company agreed to cogenerate the necessary thermal and in LINCOLN, the local public utility provided major staff and for the planning and ownership arrangements.

State Government Assistance

1. In NEW YORK STATE, the Energy Research and Development Administration has run an exemplary program of financial and technical assistance for DHC development which has resulted in systems being built, renewed, or expanded in JAMESTOWN, BUFFALO, and ROCHESTER.

2. In WASHINGTON STATE, the Energy Office has developed computer programs for system feasibility assessment and design. It has provided cities technical assistance in the use of the program. WASEO has also been a financial contributor and technical leader of a project in TACOMA that will be the energy infrastructure for the renewal and revitalization of the neighborhood surrounding an historically significant railroad station. The proposed system has been a factor in the State's decision to locate a new branch of the university in that neighborhood.

3. UTAH used schools and hospitals funds received from the Department of Energy to carry out retrofits of principal loads for the new system in PROVO which was crucial in making the system financially feasible.

CONCLUSION

Collectively, these examples suggest the importance of enlisting all of the relevant local players. Although there are possibly other methods for doing this, bringing the influential players together under the banner of an AWG creates a shared sense of responsibility and commitment that does not arise when the development team pursues important players individually. It also permits trade-offs of interests before the project plans are locked in concrete. An environment is created in which it is possible to obtain local insight and sound advice on how the project can be made most attractive considering not only the financial concerns of the individual customer but the broader interest of the community as a whole. This sense of civic responsibility can be important in tipping the scales in favor of signing up for district energy when the potential customer does not think that the impact on his balance sheet is sufficiently great to warrant the headaches and risks involved.

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